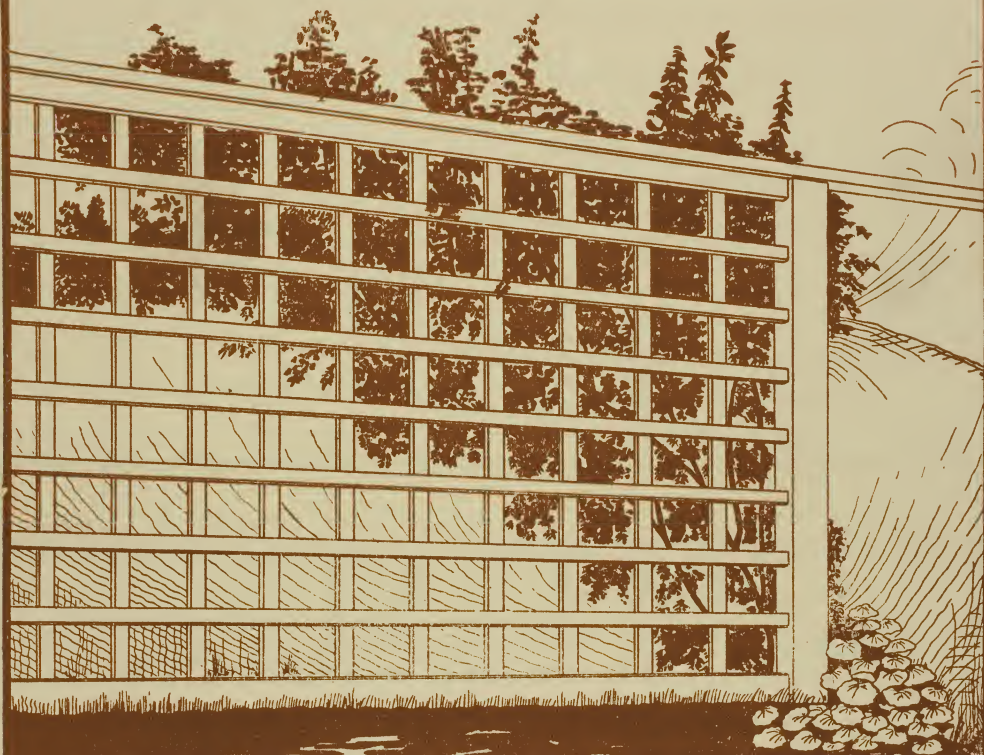


California Garden



IN THIS NUMBER

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Rose Show Premium List
How Soils Differ
April and May Gardens
Aromatic and Medicinal Plants
Repotting Ferns

APRIL, 1922

TEN CENTS



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The California Garden

*Published Monthly by the San Diego Floral Association
One Dollar per Year, Ten Cents per Copy*

Vol. 13

POINT LOMA, CALIFORNIA, APR, 1922

No. 10

Which Trees Will Do Best In Town and City Streets.

Oaks are considered by the United States Department of Agriculture to be the best trees for street planting. It is probable that oaks have not been more widely planted because of the prevalent belief that they are slow growers, and because in the North they are rather difficult to transplant. A white oak, however, which is one of the slow-growing varieties, will reach the same height as a sugar maple in the same period of time, and maples have been used much more widely than oaks for street ornamentation, despite many unsatisfactory characteristics.

A new Farmers' Bulletin, No. 1208, Trees for Town and City Streets, by F. L. Mulford, horticulturist, issued by the United States Department of Agriculture describes in detail the various oaks for street use in different regions, as well as about 100 other trees or varieties. Elms are given second place in desirability for city streets, and sycamores third. Maples are considered less desirable than has been generally supposed. Except the Lombardy poplar most varieties of poplar are not recommended.

The bulletin, which is available upon application to the United States Department of Agriculture, contains a regional map of the United States and indicates which trees flourish best under the climatic conditions of each region.

Before ornamental tree-planting for town or city streets is undertaken, a number of important points must be given attention. Trees native to one part of the United States may not thrive in another region. Some trees are objectionable because their roots penetrate defective sewers, while others grow their roots so near the surface that they have a tendency to heave or crack sidewalks.

Only vigorous trees that will withstand the dust and smoke of a city should be planted to ornament the streets. The root system should be hardy, not easily affected by unusual soil conditions, by restricted feeding areas, or by root pruning in case street improvements are made. The shape of the top of the tree when full-grown should be suited to the width of the street. The foliage should not be too dense, and should be of a pleasing texture and color. The resistance of the tree to fungi, insect pests, and tree diseases is an important

consideration. Trees that bear showy flowers, fruits, or nuts are usually undesirable for street planting.

Palms do not make good shade trees, although they are effective in formal planting. Only in the most southern parts of the country and in western California should evergreen trees be considered for street planting. Magnolias, live oaks, and a few other broad-leaved evergreens may be used in these regions. Where there is a lack of sunshine in winter it is desirable to admit all the light possible by using only deciduous trees. The bulletin gives a table showing the differences in fall coloring and the date of dropping of all foliage. Narrow streets, it is pointed out, should be planted with tall slender trees like the Lombardy poplar or small trees. Broad streets may be planted with spreading trees. As a rule, native trees that have been tried out successfully in other towns of the same general locality should be given the preference.

For use within reach of ocean spray or on sandy lands near the coast the red oak and the red or scarlet maple are suitable as far south as Charleston, S. C., while the sweet gum and the live oak are equally good from Norfolk southward and along the Gulf of Mexico. The red oak, sweet gum, red maple, and eastern live oak are all grown successfully along the Pacific Ocean, while the California live oak can be used from San Francisco southward. The trees that endure the most alkali appear to be the bladdernut tree, London plane, peppermint gum, and its variety *Eucalyptus amygdalina angustifolia*, and the Washingtonia and other hardy fan palms. The red oak and the red maple are worth testing for alkali conditions.

In the heart of a city, where the greatest difficulty is experienced in getting trees to grow the ailanthus will probably thrive when nearly all other kinds fail. The sycamore and the London plane are also good. The Carolina poplar will frequently grow in such places, and its use may sometimes be warranted. Consultation with the nearest state agricultural experiment station or with the United States Department of Agriculture is frequently advisable before deciding upon extensive street tree-planting.

Patronize the Garden Advertisers.

PREMIUM LIST

Fifteenth Annual Spring Rose Show, Roses and Other Flowers, Saturday and Sunday, May 6th. and 7th. in Civic Auditorium. Opening Saturday at 2 P. M. Admission 25 cents.

SECTION "A" AMATEURS

- * 1. Best Collection of Roses—not less than 12 varieties and not more than 3 blooms of a kind.
- * 2. Best Collection of Roses—six varieties, not more than 3 of each.
3. Best Collection of Yellow and Shaded—Yellow Roses.
4. Best Collection of Pink and Shaded-Pink Roses.
5. Best Six White Roses, one variety.
6. Best Six Red Roses, one variety.
7. Best Six Yellow Roses, one variety.
8. Best Six Pink Roses, one variety.
9. Best Six Shaded-Pink Roses, one variety.
10. Best Six Shaded-Yellow Roses, one variety.
11. Best Three White Roses, one variety.
12. Best Three Red Roses, one variety.
13. Best Three Yellow Roses, one variety.
14. Best Three Pink Roses, one variety.
15. Best One White Rose.
16. Best One Pink Rose.
17. Best One Yellow Rose.
18. Best One Red Rose.
19. Best One White Rose, Single or Cherokee Type.
20. Best One Red Rose, Single or Cherokee Type.
21. Best One Yellow Rose, Single or Cherokee Type.
22. Best Display of Polyantha or Baby Roses.
23. Best One Pink Rose, Single or Cherokee Type.
24. Best Rose in the Show any color (may be exhibited in any other class.)
25. Best San Diego County "Seedling" Rose.
26. Best New Rose not before shown in San Diego.
- *27. Best Arranged Vase, Bowl or Dish of Roses.
- *28. Best Arranged Basket of Roses.
29. Best Corsage Bouquet.

SECTION "B" AMATEURS

30. Best Arranged Basket of Flowers other than Roses.
31. Best Arranged Basket of Wild Flowers.
32. Best Arrangement of Flowers in Bowl, Vase or Dish.
33. Best Flowering Plant for the house.
34. Best Individual Specimen Decorative Plant.
35. Best Cut Specimen Flowering Vine.
36. Best Display of Bulb Flowers.
37. Best Display of Gladiolus.
38. Best Display of Iris.
39. Best Display of Iris—Germanica.
40. Best Display of Iris—English.
41. Best Display of Iris—Spanish.
42. Best Display of Pansies.
43. Best Display of Wild Flowers by an individual.
44. Best Display of Wild Flowers grown by an individual.
45. Best Display of Wild Grasses by an individual.
46. Best Floral Display from a 50-foot lot.
47. Best Floral Display from a private garden larger than 50-foot lot.
- *48. Best Collection Sweet Peas, not less than 15 stems.
- *49. Best Vase White Sweet Peas.
- *50. Best Vase Light Pink Sweet Peas.
- *51. Best Vase Dark Pink Sweet Peas.
- *52. Best Vase Red Sweet Peas.
- *53. Best Vase Lavender Sweet Peas.
- *54. Best Vase Purple Sweet Peas.
- *55. Best Vase Salmon Sweet Peas.
- *56. Best Vase Maroon Sweet Peas.
- *57. Best Vase Bicolor Sweet Peas.
- *Limit 20 sprays.
- *58. Best Arranged Basket of Sweet Peas.
- *59. Best Arranged Bowl of Sweet Peas.
60. Best Display Cinerarias, Dwarf Hybrids.
61. Best Display Cinerarias, Stellata.
62. Best Cut Spray, Cineraria, Dwarf Hybrid.
63. Best Potted Cineraria, Dwarf Hybrid.
64. Best One Cut Spray, Cineraria, Stellata.
65. Best Potted Cineraria, Stellata.
- 65½. Best Display of Pelargoniums.
- *66. Best Display of Annuals.

- *67. Best Display of Perennials.
68. Best Display of Stocks.
69. Best Display of Snapdragons.
70. Best Display of Calendulas.
71. Best Display of Larkspurs.
- *72. Best Table Decoration, using Roses, each to use a different variety.
- *73. Best Table Decoration, other than Roses.
- *74. Best General Display of Seasonal Flowers by community outside the City of San Diego proper. (In judging this class, 25% will be allowed for artistic arrangement.)

SECTION "C" CHILDREN'S CLASSES

- *75. Best Collection of Cut Flowers grown by any school in the city.
- *76. Best Collection of Cut Flowers grown by any school in the county, outside of city.
77. Best Collection of Sweet Peas grown by any school in the city.
78. Best Collection of Sweet Peas grown by any school in the county, outside of city.
79. Best Collection of Wild Flowers by any school in city.
80. Best Collection of Wild Flowers by any school in county, outside of city.
- *81. Best Arranged Basket of Wild Flowers by any school in the city.
- *82. Best Arranged Basket of Wild Flowers by any school in the county outside of city.
83. Best Decorated Dining Table by any school in the city.
84. Best Decorated Dining Table by any school in the county outside of city.
85. Best Display of Cut Flowers or Plants from Child's Garden.
- *86. Best Collection of Sweet Peas by individual child.

SECTION "D" FOR PROFESSIONALS

(Entries by Nurserymen)

- *87. Best General Display of cut Bush Roses.
88. Best General Display of cut flowers other than Roses.
- *89. Best General Display of Shrubs and plants.
90. Best Display of Everlasting Flowers.
91. Best Display of Bulb Flowers.
- (Entries by Florists)
92. Best Arranged Basket of Cut Flowers.
93. Best Arranged Bowl of Vase or Cut Flowers.
94. Best Bride's Bouquet.
95. Best Hand Bouquet.
96. Best Dining Table Decoration.

*Classes in which Trophies are offered.

RULES

1. All exhibits must be in place and properly entered by 10 a. m. of first day of show so that judging may be completed and awards made before opening. All vases, baskets, etc., belonging to exhibitors, must be called for Monday morning, not later than 11:00 o'clock. No exhibitor will be allowed to be present while judging is going on.
2. All entries must be in the hands of the clerks by 9 a. m. of the first day of show. Clerks will be on duty at 7:30 a. m. and entries will be received at any time between these hours.
3. All pot plants must have been in the possession of the exhibitor at least three months; all other flowers and plants except collected wild flowers must have been grown by the exhibitor, except where used for table decoration.
4. The committee on awards is authorized to give suitable award for any meritorious exhibit not included in classes named above.
5. Exhibits can be entered in one class only.
6. Vases are loaned without charge for cut flowers in the competitive classes.
7. Exhibits are, from the commencement of the show, under the jurisdiction of the show officials, and no exhibit shall be removed before the close of the show without the authority of the officials in charge.
8. Entries will not be considered by judges unless meritorious.
9. All Exhibits must be labeled with the correct names of the plants on white cards 2x3 inches, which will be furnished without charge. Names of exhibitors in competitive classes positively must not appear on exhibits until after awards have been made.
10. In classes where a given number of blooms is specified, any excess or deficiency of count shall constitute cause for disqualification.
11. Artificially colored flowers or plants will not be received as entries.
12. All exhibits are staged in conformity with

Patronize the Garden Advertisers.

the rules of the show. Deviation from the above rules may constitute cause for disqualification.

13. In Class 73, best dining table decoration, fancy cloth should not be used. Decorations should be so arranged on table as to allow space for service. Table will be judged on the basis of the floral decoration only.
14. Sweet Peas will be judged by length of stem, color, size, substance and number of flowers on stem.
15. The Floral Association invites exhibits, however small, if meritorious.

Exhibits of single specimens of flowers or plants will be duly considered.
No fee is charged for making entries in this show. Special reservations of space may be made by telephone at the Flower Shop, 1115 Fourth street. Where exhibits are to be of any considerable size, it is advisable to make reservations in advance.

Roses, Iris and Sweet Peas will be judged according to the standards of the National Specialty Societies.

STATEMENT OF OWNERSHIP.

Statement of the ownership, management, circulation, etc., required by the act of Congress of August 24, 1912, of California Garden, published monthly at Point Loma, for April 1, 1922.

State of California, County of San Diego, ss.

Before me, a notary in and for the State and county aforesaid personally appeared G. R. Gorton, who, having been duly sworn according to law, deposes and says that he is the editor of the California Garden, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management of the aforesaid for the time shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are:

Publisher, San Diego Floral Association, Box 323 San Diego.

Editor—
Managing Editor, G. R. Gorton, Court oHuse, San Diego.

Business managers: None.

2. That the owners are:

San Diego Floral Association, Box 323, San Diego.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder of security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is (This information is required from daily papers only).

Signed: G. R. GORTON, Editor.

Sworn to and subscribed before me this 13th day of April, 1922.

Signed: J. D. MALCOLM.

TO OUR ADVERTISERS

Aladdin's lamp was wonderful in its accomplishments, but so are the deeds of those who have cash to combine with opportunity. Begin saving today with war saving stamps, quickly convertible into cash and always worth more than they cost you.

HOW SOILS DIFFER

By Bronte A. Reynolds, Editor California Department of Agriculture.

In studying the nature of soils, we find that they possess two distinct characteristics, which have a direct bearing upon their fertility, or crop-producing power; one of these characteristics is the chemical, or the power which soils possess of furnishing those constituents that are necessary in the growth of plants, though it is not necessary that soils, perfect from the chemical standpoint, that is, that can furnish an abundance of the essential plant-food in the same proportion as they are found in plants. In fact, because of the origin and nature of soils, those constituents which are contained in them in maximum amounts are found in plants in minimum amounts, while on the other hand, those constituents which are contained in plants in maximum amounts are found in minimum amounts in soils, thus making the value of a soil from the chemical standpoint dependent rather upon the relative amounts of the four constituents, which by the continuous growth of plants are removed more rapidly from the soil than the others, viz: nitrogen, phosphoric acid, potash and lime. These are, for this reason, called essential manurial constituents, and the wide differences in soils in respect to their content to the substances which furnish them are due to changes which were wrought in the surface of the earth during its formation, to those which have taken place since, as well as to those which are going on in a small way even at the present time.

It is believed that the original earth crust contained all the minerals now found in it, and that at the beginning they were distributed more uniformly throughout its mass than at present. In the harder rocks, the sandy particles were cemented together by materials more easily disintegrated and the separation thus made in the course of time enabled the movement of the particles so separated in a different way, the coarser materials were distributed and deposited as gravel and sand in one place and the finer entered partly in solution, and was distributed and finally deposited in another place, thus giving us sandy, clayey and limy soils, all differing from each other in their amount and proportion of both the purely mechanical substances, which serve no other purpose in soils than the support of the plants and in contributing to physical character and of the chemical substances which contain the essential fertilizing constituents and which in their decay provide the food in an available form.

In addition to these kinds of soils, there are others of more recent origin, made up largely of vegetable matter, due to its accumulation in a partially decayed state; these are frequently rich in nitrogen and poor in all of the essential mineral constituents. These considerations as to the origin of soils are valuable in indicating their chemical composition and possible potential value.

Patronize the Garden Advertisers.

NORDUKE, A NEW VARIETY OF WILT-RESISTANT TOMATOES

In the course of work on the selection of tomatoes that will resist the wilt disease, which causes a large annual loss in the tomato-canning States, the United States Department of Agriculture has developed a variety called Norduke, similar to Stone, but highly resistant to wilt. Four other wilt-resistant varieties have already been produced, known as the Marvel, which is a medium early tomato selected from Merveille des Marches, bearing a heavy crop of smooth red fruit; the Norton selected from Stone, producing a heavy yield of large, smooth, solid red fruit, which ripens slowly, and therefore ships well; and Columbia and Arlington, medium late varieties, selected from Greater Baltimore.

The Marvel is an excellent variety for forcing, for medium early trucking, and for home gardening. The Columbia, like the Arlington, which has been temporarily withdrawn for purification, because of mixtures found in the seed in 1920, is better for canning than for the table, because of its somewhat flat shape, which does not permit slicing as successfully as some of the rounded tomatoes. The Norton and the newer variety, the Norduke, are late tomatoes, excellent for canning, for home gardening, and late trucking. The Norduke shows the highest resistance to wilt of any tomato, and also some resistance to the leaf-spot disease.

Wilt-resistance strains to tomatoes are developed by selecting from a variety which possesses moderate resistance, which show individual higher resistance. This resistance can be combined with other desirable qualities in other varieties by crossing. Seeds from resistant strains have been distributed through State experiment stations to canners and others for testing, and some of the varieties are now being carried in the catalogue lists of seed houses.

WAR GASSES PROPOSED FOR DESTROYING NOXIOUS PESTS

Deadly gases that were developed for war purposes are now being tried out by the United States Department of Agriculture as a means for destroying noxious birds, animals, and insects. Some of them promise to be useful when applied under proper conditions, particularly those that are heavier than air and can be used on burrowing rodents, and possibly subterranean insects and pests in stored products.

The most recent proposal is to use gas to kill destructive birds that congregate in marshes. In the coming fall the Biological Survey, in co-operation with the Chemical Warfare Service, is planning to make a trial of the method on blackbirds in the Imperial Valley of California. In that region these birds are said to do at least \$50,000 worth of damage to the milo crop each year. Because of their feeding habits it is impossible

to destroy these birds with poisoned baits, but as they roost on the reeds in the marshes, it is thought that they can be killed by a gas cloud at night when the wind is favorable. The blackbirds are migratory and return to the same places year after year. It is thought that a big killing in a certain locality will probably free it of the pests for many years. A few other birds in the blackbird-infested marshes will be killed at the same time, but the department believes that these local birds will soon reach their normal numbers again.

Arrangements also are being made by the Biological Survey with the Chemical Warfare Service for investigating the possibility of using poison gases on such burrowing rodents as rats, prairie dogs, ground squirrels, and woodchucks. Tests on pocket gophers and ground squirrels by these two co-operating branches of the Government in California show that chlorine may be used with good results if handled properly. The Chemical Warfare Service used phosgene on rats in Porto Rico with promising results. Some of these gases will be compared with carbon bisulphide for the killing of woodchucks and other rodents in their burrows.

Entomologists of the department have already worked in co-operation with the War Department in testing various gases on insect pests of growing plants and those that infest stored grain, but it has not yet been found advisable to recommend anything to take the place of hydrocyanic acid gas or carbon bisulphide.

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The April & May Gardens

BULBS AND BULB PLANTING

By Marcella Rolph Darling

Why talk of bulb and bulb planting now instead of in the fall? Because now we are filled with enthusiasm over the beautiful bed of bloom we have had for two months, because we have learned a few things from the cold wet season, and because it will soon be time to lift them and store away until the fall planting.

We have learned again that bulbs, many of them, like their feet cold and clouds hanging over them. Beds of freesias on the shady north side have reached their fragrant blossoms three feet or more on sturdy stems and held their flowers fresh for days. Hyacinths that usually want to be coddled in the dark until they have their underpinning well established and show their heads above ground, have this spring boldly thrown up their flower stalks in the beds in the open where ordinarily the full glare of the sun falls. All of the narcissi family have bloomed constantly and luxuriantly,—their sunny heads making for cheerfulness. The tulips, those aristocrats who often are so disdainful of the amateur gardener, have this year held their bulbs and blooms high on long stems.

Why don't we all plant bulbs by the hundreds and by the thousand when their culture is so easy and the returns so bountiful and so satisfactory. We all grew them back east,—a few of them under varying and trying conditions. Memory pictures the pink flower, that made its impression on childish eyes, the double yellow daffodil with its long, glossy leaves springing up through the snow-whitened ground in April.

We often hear some critical gardener says, "The season is so short for bulbous flowers, the bloom is soon over and they give us nothing the whole rest of the year." As a matter of fact the bulbous blossom holds its freshness on the stem longer than most flowers and length of season can be overcome by leaving some bulbs in the ground without water through the summer and the first fall rains in November will start them growing and you will soon have flowers. By successive planting in the fall you will have them in all stages of development and consequent bloom all winter and often as late as the spring planted bulbs come into bloom.

We are slowly awakening to the fact that this western coast is admirably adapted to bulb culture. Our government has spent

Continued on next page

THE VEGETABLE GARDEN FOR APRIL

By Arthur Birch.

At this writing, 19th inst., we are at last feeling a temperature that reminds us of the fact that this is late spring time in Southern California, and this change in temperature is accompanied by a warm drying wind, all of which is a warning to break that crust that is forming on the surface of the ground and pulverize all lumps, remembering that by doing so you are practically adding fertility to the soil. Lumps lock up the plant food and the tiny roots will creep around in the finer soil and avoid the lumps, failing to penetrate them if they are too hard. The finer the soil the more available is the plant food, so that every additional bit of pulverizing given the soil makes it that much more fertile. With the soil dug and broken finely to a foot in depth, even a poor soil will show a surprising increase in growth over the same soil which has been coarsely dug and in which the lumps have not been well broken up, and when the dry weather comes it is easy to keep the surface stirred and establish a dust mulch which is the finest protection against drying out; keeps the soil moist so that the roots can work, and prevents the sun from baking and cracking the surface.

At this time of year it is very necessary to keep constantly on the lookout for insect pests, remembering that in this matter that "eternal vigilance is the price of success." The different pests must be treated in different ways, or at least with different remedies. For bacterial ills such as tomato or potato wilt (which means that the plant wilts down and begins to dry up) there is no cure; just take the plant up and burn. Regarding the insects, first there are the chewers or eaters, such as tomato worms, cabbage worms and bugs of different kinds. These insects are all reached through the stomach by poison of some kind, arsenate of lead, commonly called Corona Dry, being one of the best remedies. This is a powder and can be applied with a small powder gun or used as a wet spray in the proportion of one tablespoonful to a gallon of water. Then there are the sucking insects which live on the sap and juices of trees and plants, these must be controlled by contact sprays, or spray that kills by contact. The sucking insects include most of the scales which affect trees, shrubs, etc., as well as aphids, plant lice, and mealy bugs, so much found on vegetables and other plants. The

Con'd on next page

BULB PLANTING CON'D.

thousands of dollars in Bellingham, Washington, in demonstrating work and has proved conclusively that we can grow as good and perhaps better bulbs than Holland, which has been the bulb country for hundreds of years, in northern Italy or any other bulb growing territory.

The reasons are, first, we can ripen them six weeks earlier than Holland; second, that we have uniformly rainless seasons in which to ripen them and third our soils are light and friable and well drained through the rainy season and yet retain moisture long enough after the dry season sets in. In fact bulb culture has unlimited possibilities on the Pacific coast and the field is practically untouched.

So many amateurs ask how shall I begin. Bury them by the dozen if that is all you can afford or have space for. And like growing two blades of grass where one grew before you will likely the next season have two or more bulbs where you planted only one and on some bulbs you will find side bulbs or bulblets that will increase your stock a hundred fold.

If you want a dainty border put in pink oxalis that will spread and multiply so rapidly that you can always dig up some of it for your neighbors, and probably find that you will have to pull it out of your rose bed where the seeds have lodged and been protected by the rose roots. Don't be tempted to grow the taller yellow variety of oxalis, while it make a lively looking border and is early in the spring, it is as great a nuisance as wire grass and spreads everywhere and is almost impossible to eradicate.

Put in a border or a bed of Zephyranthes or fairy lilies;—they take care of themselves for years, sending up early their cord-like green leaves and crocus-like flowers,—starry white. They will continue to give a few flowers almost throughout the year.

Freesias, too, almost take care of themselves, and if you lift a bed in June, gathering up all the bulbs you see, you are likely to have the same bed full of them in the spring from the little bulbs which you didn't see and which have grown through the year. Freesias, likewise, scatter their seeds and give you unexpected blossoms smuggling up against a palm, a curbing, between your rock border, or in among your shrubs, looking so saucy as if saying, "I'm here, just grew by myself."

The Alliums, too, like the Freesias, give you unwonted bloom and like them are fine for cutting for they last so well. Of course if you smell the stem end instead of the flower you detest their family, the Onion, and some sensitive noses claim the flowers also give a faint odor; but the dainty white flowers with their stamens dancing on slender green threads, the flowers bunched on other green stems and all on a long green stalk that some-

times curls itself up artistically, make a charming flower in your mixed spring bouquets.

Then there are all of the Narcissi under which are listed the Jonquills, campanelles and Daffodils so easily grown and repaying good value for time and work devoted to them. They need a chapter by themselves telling when to plant and how, what to feed them, when to lift them, how to store them also their value in the garden and commercially.

THE VEGETABLE GARDEN Con'd.

best sprays for these is resin wash, kerosene emulsion and nicotin sprays. These sprays can be applied with small spray pumps, costing from 50c to \$1.25 each. The great thing is to begin early to use these sprays in the vegetable garden so as to prevent the trouble rather than to cure. For rust, blight and mildew of your peas and beans use sulphur and Bordeaux mixture. Owing to the long continued cool weather and late season you can continue to plant practically the whole list of vegetables, more particularly beans, melons and plants of peppers and egg plant.

It is a good time now to give your lawn that top dressing of good commercial fertilizer, and see the wonderful improvement in a short time afterwards.

THE CATERPILLAR AND THE BUTTERFLY

"Good-morrow, friend." So spoke, upon a day,
A caterpillar to a butterfly.
The winged creature looked another way,
And made this proud reply:
"No friend of worms am I."
The insulted caterpillar heard,
And answered thus the taunting word:
"And what wert thou, I pray,
Ere God bestowed on thee that brave array?
Why treat the caterpillar tribe with scorn?
Art thou, then, nobly born?
What art thou, madam, at the best?
A caterpillar elegantly dressed."

DANDELIONS

Dandelions by the score,
Blossoms all around the door
Sweetheart loves them every one,
These children of the yellow sun,
Born of childish hand together;
Through the sunny springtime weather.
Dandelions opening late,
Nestle low beside the gate,
Cluster where the shadows fall,
Along the rough old garden wall,
Smile at Sweetheart as she passes
From the short, worn pathway grasses.
Sweetheart creeping through the bars,
Thinks the flowers look like stars;
And the flowers, feathery, sweet,
Bowing kiss the straying feet,
Of the sweet faced little rover,
Through the orchard grass and clover.

Aromatic and Medicinal Plants

BY BRONTE A. REYNOLDS

EDITOR STATE DEPARTMENT OF AGRICULTURE

So many requests are being received by the California Department of Agriculture soliciting information on the economical production of medicinal herbs and plants, that a random note may be of service.

The greatest difficulty in the way of economical production of medicinal herbs and plants, that a random note may be of service.

The greatest difficulty in the way of economical production of such plants in the United States is due to the vastly different wage scale.

On the Continent, in the Mediterranean Region and in the Orient, women and children, the very old and very young will labor long hours for a few cents a day, in the collecting, processing and picking of aromatic and medicinal roots, barks, leaves, flowers and seeds.

This then is one great reason why the resources of our abundant flora is not more highly developed. Vast acres of water mints abound in the North Central States, but we import our supplies from Italy. Gathering wintergreen that flourishes throughout our Appalachian range is no longer profitable.

Lavender grows well in this country but our main supplies are derived from the Vosges region of Alsace-Lorraine.

Millions of dollars worth of oils of lemon and orange and citrate of lime (a citrus by-product) are exported annually from Italy and whereas California sometimes cannot command a penny a dozen for her lemons.

The large part played in this important and valuable industry is well-illustrated in the Mediterranean island of Sardinia.

The Sardinian flora is very rich in wild aromatic and medicinal plants, originating perhaps from species formerly cultivated as medicaments and now become wild. Among these plants may be cited:—Marshmallow, arnica, borage, camomile, lesser centaury, hemlock, foxglove, eucalyptus, gentian, henbane, laurel, mallow, cleander, rue, elder, datura, squill, mullein, etc.

The southern coasts of Sardinia are rich in the Lycian juniper (*Juniperus phoenicea*) which yields 2% of an essence, not comparable, it is true, with that of *Juniperus officinalis*, but nevertheless sufficiently appreciated. The island could furnish 5000 tons of the berries of this species for distillation.

On the coasts and mountains, rosemary abounds and 15,000 tons of fresh leaves could be collected yielding from 0.25 to 0.35% of essence, as against 1 to 1.5% for dried leaves. Myrtle is very abundant, and 30,000 tons of its leaves could be collected, which when fresh, contain from 0.200 to 0.225% of essence and as much as 0.35% when dry.

The *stoechas* lavender (*Lavandula Stoe-*

chas L.) is widely distributed, especially on poor soils, little suited for cultivation both in mountain and plain. It can furnish several tons of flower heads, which yield, in a fresh state, 0.2% of essence. Wormwood is fairly widespread throughout Sardinia, but especially in the province of Sassari.

Water-mint and penny-royal, very common along the streams and in damp places, could provide 20,000 tons of raw material for distillation with a yield in essence of 0.2%.

Thyme is abundant in the zone of Mount Gennargentu; it yields about 3% of essence.

Some experiments in cultivating roses for essence have given very satisfactory results.

At Cagliari there is a company ("Societa Sardo-Lomarda Subinaghi & Co.") which collects and manipulates Sardinian aromatic and medicinal plants, but there is still much room for similar undertakings.

BACTERIA OF THE SOIL

By Bronte A. Reynolds, Editor California Department of Agriculture.

The bacteria of the soil bear a most important relation to the nutrition of plants. If a soil be heated to a temperature sufficient to destroy its bacterial life, the growth of plants will be maintained therein only up to the point of the exhaustion of its easily soluble and assimilable plant food, at the end of which time they will die of starvation. The reason for this is that new plant food can no longer be elaborated since the agents concerned in the latter process are wanting. Should this condition of sterility of the soil continue it can no longer produce crops, and were this condition universal the world would become a barren waste.

In every soil a series of complete chemical changes are taking place, due to the activities of soil organisms. These changes involve the digestion of crude plant food whereby an otherwise useless constituent of the soil is put into such a state that it can be absorbed by the plant. Digestion, therefore, implies the rendering soluble of an otherwise insoluble substance.

Nutrition whether applied to animals or plants implies three distinct processes; digestion, absorption, and assimilation. Digestion is the rendering soluble; absorption is the taking up of the soluble products, while assimilation is the elaboration of new tissues from the absorbed products.

Substances to be absorbed must be so changed that they will dissolve in the fluids of the organisms, which in the case of an animal, is the blood or lymph, and of the plant, its juices.

Starch taken as food is insoluble in the fluids of the body; it therefore cannot be absorbed until it is converted into a soluble

sugar. A morsel of lean meat is insoluble, however fine its state of division, hence before it can be absorbed it must be converted during digestion into a soluble pepton.

What is true of the crude elements of animal food is equally true of the crude plant food of the soil. Thus the granule of mineral matter, the bit of bone in a fertilizer, the shred of dried blood or other animal matter, the top and root of the clover turned under all these and many other forms of crude plant food are in themselves of no use to the plant until the elements therein are put into such a shape as to be taken up into the juices of the plant through the absorbing rootlets. Furthermore, as we have intimated, this work of digesting the crude plant food of the soil is continually being carried on by myriads of microscopic organisms present in every normal soil. Through their agency nourishment is gradually and continually being supplied to growing crops as rapidly as their needs demand, and there results a beautiful and wonderful relationship and balance between the life of the highest and lowest of the plant creation. The one is dependent upon the other, and independently neither can normally exist.

Such is the general relationship existing between soil micro-organisms and plant growth.

GARDEN SLUGS WILL NOW BE BUSY

By Bronte A. Reynolds, Editor California Department of Agriculture.

Gardeners, mushroom growers, and truckers frequently observe irregular holes in the foliage of such crops as lettuce, tomato, peas, and beans, either grown under glass or in the open, and mushrooms from which holes have been cut as by a mouse or rat. By close observation a glistening whitish substance will be seen on the plants or near by, and search under stones, old boards, and rubbish will disclose the cause of the injury—the garden slug.

Attack is most severe on delicate seedlings, but various tubers and roots are subject to injury. Potatoes are bored into and celery is frequently damaged during the bleaching process.

Garden slugs are not insects, although their injury is similar and they are sometimes called insects. They are mollusks and therefore related to the snails, although they have no external shell.

An extremely distressing feature of damage is that occasioned to young seedling plants set out in the flower garden, and often the amateur gardener is at loss where to place the blame when he discovers that the small plants have been defoliated over night.

This is the work of the garden slugs that have overwintered in drains and cellars or under cement walks, and now as the weather moderates crawl forth after dark, to feast upon the garden greenery.

Control in Gardens

Arsenic and other poisons are not especially favored in slug control, but lime and salt may be used in moderation.

To protect young plants make a ring of salt or lime around the tender plants.

When the slug touches these substances it will wriggle into the material. This causes it to secrete slime copiously and soon it exhausts itself and dies.

In the green house slugs are more difficult to control, because there is a wider range for their activities and their hiding places are more numerous and not readily located. Young seedling beds should be protected by a border of such substances as salt or lime. In the case of potted plants each pot should be taken out and examined before the border of repellent is placed around it, as such pots are among the favorite haunts of the young slugs.

Treatment in the Field

When abundant in the field or garden the slug is even more difficult to control than in the mushroom house or green house, and the only solution of the problem consists in thoroughly cleaning up the hiding-places of the pest, around the edges of the garden, under old boards and stones, and in any place that is cool and moist. These places should then be sprinkled with lime and where practicable lime should be applied directly to the area and plants on which the slugs are feeding. In time this will drive them away.

The FLOWER SHOP



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Plant Exchange Day In Shreveport Louisiana

The occasion described in this article seems a significant sign of the times. The apparent fact that plants and seeds were distributed free of cost does not lessen the importance of the event for the florist, nurseryman or seedsman, for the man or woman whose love of growing things is quickened by the gift of a few plants or seeds will make a better customer of the tradesman than before. The man in the trade can afford to lend his encouragement to the "plant exchange" idea.

The first community-wide plant exchange day ever observed in Shreveport was in the auditorium of the City Hall, Feb. 22, 1922. The exchange was promoted by the Shreveport Community Service co-operating with the garden club of the Woman's Department Club, who have had this plant exchange day for several years. The following plants and seeds were exchanged:

Ferns, 25; roses 82; honeysuckle cuttings 10; lettuce plants 4; potato eyes 24; larkspur 50; poppies 45; corn flowers 250; queen's lace 80; privet 9; white carol flowers 100; periwinkle 200; rain lilies 400; spirea 15; fig trees 75; ribbon grass 3; ivy 350; ragged robin 42; marigolds 20; gaillardia 150; flags 119; calliopsis 25; verbena 125; tiger lilies 51; petunias 110; chrysanthemums 526; geraniums 10; cactus 25; wandering jew 191; daisies 293; hydrangeas 31; begonias 23; moss 14; cannas 583; cape jasmine 16; total 4308.

Thus George Washington's birthday was observed, and we emphasized the patriotism of the occasion by sowing deep that the winds of circumstance blow not the seed away—not cutting down, but transplanting the cherry tree. All nature co-operated with us to make the day a success, and there was sunshine and shadow all combined to assist in securing and planting seeds and plants.

Nature Had Spring Dress On

The peaches were all abloom in their new spring dress of shaded pink. The redbud trees were spinning their flags of red to wave in celebration of the day; and the dogwoods were busy preparing their white flags of "Peace on earth and good-will to man" for the Easter time. All nature was at work preparing and waving her green flag of a disposition to cover up all dark places, and make alive and new the earth. The yellow jonquils nodded their heads at the blue violets, and all the bluebells rang with joy.

The entire third floor of the City Hall was used for this occasion. Tables were arranged and in charge of the club women who were familiar with the plants on their table, and gave instructions how to plant, etc.

One long table was given over to the seed department, flower and vegetable seed, and that corner was a busy one all day. I had

the pleasure of spending some time with this department and found so many interesting people and was privileged to answer so many inquiries about flowers and how to grow them successfully.

The brickmason came with the lime and dust of his trade still clinging to shoes and coat. Said he came at the noon hour, and had his Ford downstairs; wanted some red roses to cover a pergola he had made for "Henry"—wanted those that bloom in bunches. We recognized the Crimson Rambler from his description and supplied his wants. He went away happy with seed packages in his pockets, canna bulbs, rose cuttings, and a fig tree. Making a home? Yes.

Some Interesting Characters

Little old woman and little old man, and the brickmason. Yes, and the real estate man came wanting larkspur and sunflowers to make his subdivision represent gold. Said he wanted all the flowers yellow ones, showing folks that it was a golden opportunity for a home. We gave him sunflowers, golden glow and goldenrod for Peace, Plenty and Prosperity.

In the afternoon the school children came. It was interesting to find their knowledge of what they wanted to plant and their original ideas of gardening. Some high school pupils, boys and girls, holding hands some of them, and dreaming dreams, long, long, dreams of youth. The indications are that some of their dreams are sure to come true.

One I knew slipped up very close and whispered, "Will lilies of the valley bloom in June?" I assured her that we would have some especially for her. She said, "School will be out in May, I will graduate, and in June I want a garden." I know that they are to go out together to start one of the greatest institutions in the world today, A Home. And on and on they came, full of interest and desire, and all of them merry.

After having waited downstairs several hours for the doors to be opened, one old lady 75 years young, was the first to make the rounds of every table. She was a quaint little lady, her bright eyes sparkling under wool cap, asking so many questions, and placing one of each in her large basket. Now it was crepe myrtle shrubs, then lettuce almost ready for the table, some potato sprouts ready for planting, their life-spark of white showing through the dark rough brown telling the story of going into the earth to multiply and produce. Then some daisies, tiger lilies, quaint old pinks and hollyhocks, rose cuttings, all went into that basket, labeled and tagged for planting. She stayed all morning. One of the chairmen took her home in her car, for she lived away out in the suburbs; but she had returned before our lady of the

car was through lunch, and was busy at the seed table. This chairman brought her some pansies from her home garden, and the joy they gave our quaint old lady proved them to be, indeed, "heart's-ease."

One of our commissioners came for seeds for his parks: wanted zinnias, called them zennias. Our lady of the seed department corrected him, as she had many others before, saying, "They are not zennias, they are zinnias."

One of our society ladies came in with fig trees, several of them. They are gone before she reached the other end of the table. She went home for others and they were eagerly received, and other hands reached in vain, for the supply was exhausted. She was so pleased at the eagerness with which they were received that she has decided that next year she will make fig trees her specialty.

It was a wonderful day, and as the shadows of evening approached there was not a plant remaining. Every one had found a home, and the committee felt that they had earned a "night's repose."

Everybody was happy and felt that the combined efforts of the clubs and community service were positive proof of, "Alone we can do little, separate we are units of weakness: but united we become batteries of power."

They had made of the day a great success. Truly, educate and organize are the watch-words of success. No inharmony, no lack, no want, was there; but glad good-will to all was the keynote.

All arrangements were complete and every care was taken to see that the plants were free from germs and blight. Our state entomologist was with us for the day, inspecting all plants before they were placed on the tables. All plants were wrapped and labeled, and all were eagerly received. They went to the joy and delight of the donors and the recipients, and we know they will make many homes happier with their fragrance and beauty.—Willie Stevens Norwood, in The Southern Florist.

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MR. POTENTIAL ADVERTISER.

One of the Garden advertisers reports that he got \$80.00 worth of business from a \$1.50 ad. a few days after its insertion. If our arithmetic is any good he realized a profit of \$78.50—over 5200%—which is about all a reasonable man could expect. He increased his advertising space.

REPOTTING FERNS

I am of the opinion that Ferns, as a rule, are repotted far oftener than there is any necessity for. Regularly as the season comes round the repotting of Ferns in many gardens is considered of such importance that it is attended to annually. Except for some of the species which may require extra pot room for growing on into specimens, I am of the opinion that much of the constant annual repotting may well be dispensed with, this not only saving labour and material, but also benefiting the plants. It cannot but have been noticed, especially in the case of Maiden-hair varieties, how when on being repotted the growth has not started away so freely as one would have been led to expect by the appearance of the crowns beforehand. Often have these appeared bristling with incipient fronds, but how few have advanced out of this stage? This, I am of opinion, may be attributed to the everlasting pernicious habit of continually repotting. I have some few hundreds of Maiden-hair Ferns, which have not been repotted for the past three or four years, in pots ranging from 5 inches up to 7 inches and 8 inches in diameter. They are now a mass of large, well-developed fronds, and they have been the same each succeeding year. I am sure these Ferns would not have succeeded so well had they been repotted annually. Another advantage is they grow better in this state in a cold house or even an ordinary conservatory. The principal point is to keep them well supplied with water, as the pots, being crammed with roots, an almost unlimited supply is needed, also feeding well. During the summer the plants are watered twice daily, and at this season once a day. Whilst in full growth, periodical dressings of some fertiliser are given, the fronds retaining their healthy green hue throughout the season. In the cultivation of Ferns under this system of not frequently repotting, care must be taken that the pots are efficiently drained in the first instance.

The potting on of young stock is another matter, as there must be sufficient rooting space afforded to enable them to grow to a useful size. Often, where the practice of annual repotting is adopted, all that is done is to turn them out of the pot, partially reduce the old ball of soil, and repot again into the same sized pot. Mutilating the roots is alone sufficient to check the development of the fronds, although by potting on young stock the balls are not mutilated to such an extent; consequently, they succeed better than the older plants. Certainly there comes a time when they must be repotted, for if the soil be at all sour or exhausted they will not succeed. Letting the plants become over-dry is the evil, for with the roots thoroughly dry the plant very quickly collapses. *Adiantum Farleyense* is one of the Ferns that will not succeed if allowed to become pot-bound to an undue extent. I repot this Fern annually, but never disturb the roots. A.

Patronize the Garden Advertisers.

REJUVENATING SICK PLANTS

The following notes must perforce be accepted by the reader with a modicum of charity, since the author holds no degrees and claims no right to invade the field of plant pathology. Hence it will be understood that these notes are based—only on observation.

You have noticed oftentimes that potted plants do not seem to thrive, lose vigor and are noticeably off-color! If the plant in question is not pot-bound, it is safe to assume that it suffers from a form of malnutrition. Very often this malnutrition is due to a lack of "animal food." Really, one would be surprised to learn how very "carnivorous" plants can become! Carefully remove the plant and earth from pot, place in bottom of pot a cracked fresh soupbone, shreds of meat and all; replace plant and earth and note the difference in a few days. No objectionable odor will be given off, as the plant will absorb it. In due time a marked change should be noted, the plant taking on a more healthy green color and appearing, generally, more robust. (B. A. Reynolds.)

EUSTIS LIMEQUAT PROVES GOOD SUBSTITUTE FOR LIME

With the uncertainty in the production of limes in Florida, due to the sensitiveness of the plants to cold, a new citrus variety, known as the limequat, is coming into prominence, and is being listed by several nurseries. The limequat was produced by the United States Department of Agriculture in the course of various experiments in hybrid citrus fruits. It was obtained by crossing the West India lime with the kumquat orange. The hybrids possess the hardy characteristics of the kumquat, and while not as resistant to citrus canker as the still harder kumquat, it is satisfactory in resistance, and can be recommended, especially for home gardens.

The fruit is very much like the lime in quality and flavor, and can be used in "ade" drinks in the same way as lime. This quality is especially desirable in Florida, as California lemons are not obtainable, owing to quarantine restrictions against the disease "brown rot." Sicily lemons are expensive and difficult to get, so that a good acid citrus is a scarcity for ade making. Moreover, the rind of the limequat, like that of the kumquat, is edible, so that the whole fruit may be utilized. The color is light yellow, resembling that of grapefruit.

Budding experiments on different stocks are in progress, and the present indications are that the limequat will thrive on any of the stocks commonly used—except the sour orange. Like the lime, if planted low and mounded with soil, the limequat bud will strike its own roots, thus simplifying the stock question. The fruit is borne at the most desirable time, during the hot summer months. The limequat promises to become a valuable addition to the list of citrus fruits.

QUARANTINE ESTABLISHED AGAINST SATIN MOTH

Washington, D. C., Jan. 11.—A Federal quarantine, effective January 1, against New Hampshire and Massachusetts to prevent the spread of the satin moth, a dangerous insect pest newly discovered in this country, has been announced by the Federal Horticultural Board, United States Department of Agriculture. The action by the department follows a hearing held here in December, when various phases of the situation were discussed.

The following towns and all territory between them and the Atlantic Ocean are designated in the quarantine notice as satin moth infested area:

Rye, North Hampton, Hampton Falls, Seabrook, and South Hampton, New Hampshire; Merrimac and Haverhill, Massachusetts; Salem, New Hampshire; Methuen, Andover, Tewksbury, Lowell, Chelmsford, Billerica, Bedford, Concord, Sunbury, Framingham, Sherborn, Holliston, Millis, Natick, Needham, Boston, and Quincy, Massachusetts; also the town of Rockland, in Plymouth County, Massachusetts.

The quarantine prohibits or restricts the movement of the insect's principal carriers, poplar, willow, and related plants, from these States, or from any districts in them found to be infested with the pest, into other States or Territories.

Following is the notice of quarantine as signed by the Secretary of Agriculture, together with regulations prescribed by him:

Notice of Quarantine No. 53.

(Effective on and after January 1, 1922.)

The fact has been determined by the Secretary of Agriculture, and notice is hereby given, that an injurious insect, the satin moth (*Stilpnotia salicis* L.) new to and not heretofore widely prevalent or distributed within and throughout the United States, exists in the States of New Hampshire and Massachusetts.

Now, therefore, I, Henry C. Wallace, Secretary of Agriculture, under authority conferred by Section 8 of the Plant Quarantine Act of August 20, 1912, (37 Stat., 315), as amended by the Act of Congress approved March 4, 1917, (39 Stat., 1134, 1165), do hereby quarantine the States of New Hampshire and Massachusetts, and by this Notice of Quarantine No. 53, effective on and after January 1, 1922, do order that no species or variety of poplar (*Populus*) and willow (*Salix*) shall be moved or allowed to be moved interstate from the said quarantined States in manner or method or under conditions other than those prescribed in the rules and regulations hereinafter made and amendments thereto; provided, that the limitation of the restrictions of this quarantine and the rules and regulations supplemental thereto to the areas in a quarantined State now, or which may hereafter be, designated by the Secretary of Agriculture as infested by the satin moth, shall

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A. D. Robinson, Editor
Office, Roscroft, Point Loma, Cal.

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What singing of the storm, O forest flower,
What stir of rhythmic pines,
From drooping boughs what dripping of the
shower,
Fashioned your lovely lines!

What melody of tides along the shore,
Sobbing from shelf to shelf,
What song the brooding mother-bird sings
o'er
In silence to herself!

What flush of timid sunrise, filtered through
The dusk with roseate glint,
What moonbeams in the mold and dark and
dew
Painted your perfect tint!

What more than tropic winds, just this side
heaven,
What airs from Paradise,
Blown deep within your heart of hearts has
given
This sweetness to your sighs!

The savage changed his sad and darkling
mood,
And melted in the gloom
To music of the wild and murmuring wood
When his foot crushed your bloom.

And naught to him the separating seas,
Naught seemed the wintry death,
When the glad Pilgrim first upon his knees
Breathed your delicious breath.

And naught to me shadow of grief or strife,
While your mysterious birth
Blazons the beauty that the Spirit of Life
In passing gives the earth!

—Harriet Prescott Spofford.

QUARANTINE ESTABLISHED AGAINST SATIN MOTH

Continued from page 11

be conditioned upon the establishment and enforcement by the State of such control measures in co-operation with the United States Department of Agriculture with respect to the designated infested areas as in the judgment of the Secretary of Agriculture shall be deemed adequate to effect the control and prevent the spread of the satin moth.

Done at the City of Washington this 28th day of December, 1921.

Witness my hand and the seal of the United States Department of Agriculture.

(Seal)

HENRY C. WALACE,
Secretary of Agriculture.

Rules and Regulations Supplemental to Notice of Quarantine No. 53.

Regulation 1.—Definitions.

For the purpose of these regulations the following words, names, and terms shall be construed, respectively, to mean:

- (a) Satin moth: The insect known as the satin moth (*Stilpnotia salicia* L.
- (b) Quarantined area: Any State quarantined by the Secretary of Agriculture upon determination by him that the satin moth exists therein.
- (c) Infested area: Those portions of any quarantined States which are designated by the Secretary of Agriculture as infested with the satin moth.

Regulation 2.—Plants subject to restriction.

The restriction on the movement of the plants covered in this Notice of Quarantine No. 53, and in the rules and regulations supplemental thereto, shall apply to the products enumerated in this notice of quarantine originating in or moving from the areas in the quarantined States now, or which may hereafter be, designated by the Secretary of Agriculture as infested areas.

No restrictions are placed by this quarantine and the regulations supplemental thereto on the interstate movement of the plants enumerated therein from points in the quarantined States outside of the areas now, or which may hereafter be, designated by the Secretary of Agriculture as infested areas.

Regulation 3.—Infested areas.

The following towns and all the territory between said towns and the Atlantic Ocean are designated as satin moth infested area:

Rye, North Hampton, Hampton, Hampton Falls, Seabrook, and South Hampton, New Hampshire; Merrimac and Raverhill, Massachusetts; Salem, New Hampshire; Methuen, Andover, Tewksbury, Lowell, Chelmsford, Billerica, Bedford, Concord, Sudbury, Framingham, Sherborn, Holliston, Millis, Natick, Needham, Boston, and Quincy, Massachusetts; also the town of Rockland, in Plymouth County, Massachusetts.

(Seal)

HENRY C. WALACE,
Secretary of Agriculture.

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